



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/591,223

08/31/2006

Roger John Leach

COLGRA P68AUS

7816

20210 7590 08/19/2010
DAVIS & BUJOLD, P.L.L.C.
112 PLEASANT STREET
CONCORD, NH 03301

EXAMINER

KHATRI, PRASHANT J

ART UNIT

PAPER NUMBER

1783

MAIL DATE

DELIVERY MODE

08/19/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,223	Applicant(s) LEACH, ROGER JOHN	
	Examiner PRASHANT J. KHATRI	Art Unit 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-38 and 40-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-38 and 40-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 27-29, 31, 37, 45-47, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhardinger et al. (**US 5714199**) in view of Luski et al. (**US 20030079369**).

4. Gerhardinger et al. disclose a method for applying a polymer powder to a preheated substrate and article thereof. Concerning claims 45-47, 49, and 50, Gerhardinger et al. disclose preheating a glass substrate and then applying a pre-polymer onto a surface of the substrate and then allowing the coating to cure (**abstract; FIGS. 1 and 4; cols. 3-4, lines 23+**). Examiner notes the preheating of the substrate allows durable and abrasion resistant coatings that have excellent adhesion to the substrate (**col. 7, lines 36+; abstract**). Examiner notes that the coating may be applied to the top surface (**FIG. 4; col. 4, lines 48+**). Concerning the presently claimed thermosetting powder, Gerhardinger et al. disclose the pre-polymer is an epoxy pre-polymer or epoxy/polyester powder and may be thermosetting (**col. 5, lines 1+**). Regarding claims 27-28, Gerhardinger et al. disclose the use of a silane may be

Art Unit: 1783

included within the powder (**col. 5, lines 19+**) or sprayed on prior to the application of the pre-polymer powder (**col. 9, lines 29+**). Concerning claim 37, Examiner takes the position that the application of multiple coatings of the pre-polymer would have been obvious to add multiple layers in order to achieve the desired aesthetic appeal.

However, Gerhardinger et al. is silent to heating the glass substrate from the second surface.

5. Luski et al. disclose a process and apparatus for drying a film layer. Concerning the limitation of heating the glass from the second surface, Luski discloses forming a coating on a carrier substrate wherein the film layer is deposited and dried in a plurality of stages (**abstract; para. 0016-0021, 0042, 0045; FIG. 1**). Examiner notes that the film material may be comprised of a thermosetting material (**para. 0048-0055**).

Regarding 29 and 31, Luski discloses the carrier substrate, it is noted that the heating dries the layer from the bottom to the top and can be done by means of IR, heat lamps, and the like (**para. 0062**). Luski discloses that different compositions will have different drying requirements and one of ordinary skill in the art would know how to adjust the process accordingly (**para. 0046**). The process of heating from the second surface of the substrate carrier allows for uniform formation of the coating by eliminating the "skin effect" caused by fast drying methods and as a result, producing a coating that has little or no surface defects (**para. 0055, 0062-0066**).

6. However, note that while Luski et al. do not disclose all the features of the present claimed invention, Luski et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently

Art Unit: 1783

claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, heating from the second surface of a substrate carrier in order to form uniform coatings that do not have the "skin effect" and other surface defects formed by the coating and in combination with the primary reference, discloses the presently claimed invention.

7. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Gerhardinger et al. disclose a method for applying a polymer powder to a preheated substrate and article thereof. However, Gerhardinger et al. is silent to heating the glass substrate from the second surface. Luski et al. disclose a process and apparatus for drying a film layer upon a substrate carrier. The motivation to combine the above references is drawn towards the method forming uniform coatings by eliminating the "skin effect" caused by faster drying methods and as a result, a coating that has little or no surface defects. Thus, it would have been obvious to one of ordinary skill in the art to apply the method as shown by Luski in order to produce coatings that do not have the "skin effect" and therefore, a uniform coating that has little or no defects.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhardinger et al. (**US 5714199**) in view of Luski et al. (**US 20030079369**) as applied to claim 29 above, and further in view of Wang (**Book**).

Art Unit: 1783

9. Gerhardinger and Luski disclose the above but are silent to the IR heater having a reflective internal surface.

10. As evidenced by Wang, most infrared heaters have reflectors to focus the radiation to a target (**p. 8.32**).

11. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Gerhardinger and Luski disclose the above but are silent to the IR heater having a reflective internal surface. As evidenced by Wang, most infrared heaters have reflectors to focus the radiation to a target (**p. 8.32**). Thus, in order to improve efficiency of the IR heater, one of ordinary skill in the art would have applied a reflective internal surface to the IR heater of Luski.

12. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhardinger et al. (**US 5714199**) in view of Luski et al. (**US 20030079369**) as applied to claim 29 above, and further in view of Horinka et al. (**Journal article**).

13. Horinka discusses the relationship between frequency, wavelength, and energy level for infrared curing process of powder coatings. It is noted that wavelength is inversely proportional to frequency; therefore, at longer wavelengths, the frequency would be lower and at shorter wavelengths, the frequency would be higher.

Furthermore, as disclosed by prior art low energy is equivalent to low temperatures and high energy to high temperatures (**p. 1**). Prior art additionally discloses that some systems may have controls whereby the voltage may be adjusted (**p. 2**). Examiner takes the position that controlling voltage would thereby control the energy disposed.

Art Unit: 1783

14. Note that while Horinka does not disclose all the features of the present claimed invention, Horinka is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the effect of frequency on infrared energy in order to show that frequency may be controlled by increasing or decreasing voltage and in combination with the primary reference, discloses the presently claimed invention.

15. Horinka is drawn to discussing the various factors associated with infrared curing during a powder coating process. Varying the frequency, or energy would be obvious to one with ordinary skill in the art as it is recognized that at higher energies, the material would melt faster and for an even coating that does not degrade, a control would be added to the system.

16. Claims 33-36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhardinger et al. (**US 5714199**) in view of Luski et al. (**US 20030079369**) as applied to claims 37 and 45 above, and further in view of Boucher et al. (**US 3549466**) and Storrs (**US 1988964**).

17. Gerhardinger and Luski disclose the above but are silent to a metal foil extending inward from the edges.

18. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly (**col. 2, lines 67+**). Prior art discloses the metal foil allows for protection

Art Unit: 1783

against harmful gases within the atmosphere (**col. 1, lines 55+**) and the ingress of moisture in an “air gap” type of panel (**col. 3, lines 45+**). The thickness the foil is from 0.003 inch and 0.010 inch (**col. 2, lines 68+**), which when converted is 76 microns to 254 microns. However prior art is silent to inward extension of the metal foil.

19. Storrs discloses a metal edge strip as holding means that forms inward extensions (**FIGS. 2-6**). Prior art discloses the holding means prevent dust or dirt from entering an air gap in a double pane installation, which results in a high thermal insulation (**p. 3; 1st col. bridged to 2, lines 48+**). Regarding the inward extension length, Examiner takes the position that the length is an optimizable feature that one of ordinary skill in the art would know to vary depending on the size of the glazing, while maintaining the thermal insulation characteristics of the prior art disclosure. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). While it is noted that the material disclosed by prior art is not explicitly a foil, as shown by prior art, the edge sealing features allow for protection against moisture, gases, dirt, and the like. Further, given that the resultant structure would be the same as presently claimed, Examiner takes the position that the resultant structure would inherently reduce thermal stresses in dual pane installations.

20. Note that while Boucher et al. and Storrs do not disclose all the features of the present claimed invention, Boucher et al. and Storrs are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather

Art Unit: 1783

these references teach a certain concept, namely, metal foil and an inward extension in order to yield an edge seal feature that is capable of providing dual pane glazings protection from moisture, dust, and dirt and in combination with the primary reference, discloses the presently claimed invention.

21. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly. However prior art is silent to inward extension of the metal foil. Storrs discloses a metal edge strip as holding means that forms inward extensions. The motivation to combine the above references is drawn towards the metal foil used for protection against harmful gases within the atmosphere and ingress of moisture. Further, it is noted that the inward extension as shown by Storrs allow for protection against moisture, gases, dirt, and the like. Therefore, it would have been obvious to one of ordinary skill in the art to apply a metal foil with the inward extension of the foil edges for protection of a dual pane installation.

22. Claims 40-44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhardinger et al. (**US 5714199**) in view of Boucher et al. (**US 3549466**) and Storrs (**US 1988964**).

23. Gerhardinger et al. disclose a method for applying a polymer powder to a preheated substrate and article thereof. Concerning claims 40 and 48, Gerhardinger et al. disclose preheating a glass substrate and then applying a pre-polymer onto a surface that is either forming the backing or the top of the substrate and then allowing

Art Unit: 1783

the coating to cure (**abstract; FIGS. 1 and 4; cols. 3-4, lines 23+**). Concerning the presently claimed thermosetting powder, Gerhardinger et al. disclose the pre-polymer is an epoxy pre-polymer or epoxy/polyester powder and may be thermosetting (**col. 5, lines 1+**). Examiner notes the preheating of the substrate allows durable and abrasion resistant coatings that have excellent adhesion to the substrate (**col. 7, lines 36+; abstract**). However, Gerhardinger is silent to a metal foil extending inward only partially from the coating.

24. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly (**col. 2, lines 67+**). Prior art discloses the metal foil allows for protection against harmful gases within the atmosphere (**col. 1, lines 55+**) and the ingress of moisture in an "air gap" type of panel (**col. 3, lines 45+**). The thickness the foil is from 0.003 inch and 0.010 inch (**col. 2, lines 68+**), which when converted is 76 microns to 254 microns. However prior art is silent to inward extension of the metal foil.

25. Storrs discloses a metal edge strip as holding means that forms inward extensions (**FIGS. 2-6**). Prior art discloses the holding means prevent dust or dirt from entering an air gap in a double pane installation, which results in a high thermal insulation (**p. 3; 1st col. bridged to 2, lines 48+**). Regarding the inward extension length, Examiner takes the position that the length is an optimizable feature that one of ordinary skill in the art would know to vary depending on the size of the glazing, while maintaining the thermal insulation characteristics of the prior art disclosure. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). While it is noted that the material disclosed by prior art is not explicitly a foil, as shown by prior art, the edge

Art Unit: 1783

sealing features allow for protection against moisture, gases, dirt, and the like. Further, given that the resultant structure would be the same as presently claimed, Examiner takes the position that the resultant structure would inherently reduce thermal stresses in dual pane installations.

26. Note that while Boucher et al. and Storrs do not disclose all the features of the present claimed invention, Boucher et al. and Storrs are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely, metal foil and an inward extension in order to yield an edge seal feature that is capable of providing dual pane glazings protection from moisture, dust, and dirt and in combination with the primary reference, discloses the presently claimed invention.

27. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly. However prior art is silent to inward extension of the metal foil. Storrs discloses a metal edge strip as holding means that forms inward extensions. The motivation to combine the above references is drawn towards the metal foil used for protection against harmful gases within the atmosphere and ingress of moisture. Further, it is noted that the inward extension as shown by Storrs allow for protection against moisture, gases, dirt, and the like. Therefore, it would

Art Unit: 1783

have been obvious to one of ordinary skill in the art to apply a metal foil with the inward extension of the foil edges for protection of a dual pane installation.

Response to Arguments

28. Applicant's arguments with respect to the rejections containing the Sopko reference have been considered but are moot in view of the new ground(s) of rejection. However, in regards to the Boucher and Storrs references, the references are still found to be applicable. Concerning the Boucher and Storrs references, Applicant asserts the limited extension of the foil onto the coating rather than the glass is surprising and not obvious due to the thermal stress relief. However, it is noted that "the arguments of counsel cannot take the place of evidence in the record", *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner's position that the arguments provided by the applicant regarding the unexpected results of limited extension of the foil having thermal stress relief from the foil must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), "the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is

Art Unit: 1783

(571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M.
(First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1783

PRASHANT J KHATRI
Examiner
Art Unit 1783